

# Alfredo L. Aretxabaleta

U. S. Geological Survey  
Woods Hole Science Center  
384 Woods Hole Rd (Quissett Campus)  
Woods Hole, MA 02543, USA

phone: +1 508 457 2204  
fax: +1 508 457 2310  
[aaretxabaleta@usgs.gov](mailto:aaretxabaleta@usgs.gov)  
<https://profile.usgs.gov/aaretxabaleta/>

## Personal Information:

Date of Birth: 13 February, 1975

Place of Birth: Vitoria-Gasteiz, Spain

## Education:

Ph.D.: 2005 Marine Sciences (Physical Oceanography), University of North Carolina at Chapel Hill, USA

B.S.: 1998 Marine Sciences, Universidad de Las Palmas de Gran Canaria, Spain

## Employment:

2010- Scientific Programmer, Contractor, Integrated Statistics, USGS, Woods Hole

2009- 2012 Guest investigator, PO, Woods Hole Oceanographic Institution

2009- 2012 Post-doctoral Juan de la Cierva Investigator, Institut de Ciencies del Mar, CSIC, Barcelona

2007-2008 Guest investigator, AOPE, Woods Hole Oceanographic Institution

2007-2009 Post-doctoral I3P Investigator, Institut de Ciencies del Mar, CSIC, Barcelona

2006-2007 Post-doctoral Investigator, AOPE, Woods Hole Oceanographic Institution

2005-2006 Post-doctoral Fellow, Department of Marine Sciences, UNC-CH

2000-2005 Research Assistant, Department of Marine Sciences, UNC-CH

1998-2000 Teaching Assistant, Department of Marine Sciences, UNC-CH

## Refereed Articles:

### *Ganju et al. (2015)*

Ganju, N. K., M. J. Brush, B. Rashleigh, A. L. Aretxabaleta, P. del Barrio, M. Forsyth, J. S. Gear, L. A. Harris, S. J. Lake, G. McCardell, J. O'Donnell, D. K. Ralston, R. P. Signell, J. M. Testa, J. M.P. Vaudrey, Progress and challenges in coupled hydrodynamic-ecological estuarine modeling, *Estuaries and Coast*, doi:10.1007/s12237-015-0011-y, 2015.

### *Aretxabaleta et al. (2015)*

Aretxabaleta, A. L. , K. W. Smith, and J. Ballabrera-Poy. Regime Changes in Global Sea Surface Salinity Trend, *Ocean Sci. Discuss.*, 12, 9831011, doi:10.5194/osd-12-983-2015, 2015.

### *Grifoll et al. (2015)*

Grifoll, M., A. L. Aretxabaleta, J. L. Pelegri, M. Espino. Shifting Momentum Balance and Frictional Adjustment Observed over the Inner-Shelf During a Storm, *Ocean Sci. Discuss.*, 12, 897924, doi:10.5194/osd-12-897-2015, 2015.

*Ganju et al. (2014)*

Ganju, N. K., Miselis, J. L., and Aretxabaleta, A. L. Physical and biogeochemical controls on light attenuation in a eutrophic, back-barrier estuary. *Biogeosciences*, 11(24), 7193-7205, 2014.

*Lough and Aretxabaleta (2014)*

Lough, R. G., A. L. Aretxabaleta, Transport and retention of vertically migrating adult mysid and decapod shrimp in the tidal front on Georges Bank. *Mar. Ecol. Prog. Ser.*, 514, 119–135, 2014

*Grifoll et al. (2014)*

Grifoll, M., V. Gracia, A. L. Aretxabaleta, J. Guillen, M. Espino, J. C. Warner. Formation of fine sediment deposit from a flash-flood river in the Mediterranean Sea. *J. Geophys. Res.*, 119, 58375853, doi:10.1002/2014JC010187, 2014.

*del Barrio et al. (2014)*

del Barrio, P., Ganju, N. K., Aretxabaleta, A. L., Hayn, M., García, A., Howarth, R. W., Modeling future scenarios of light attenuation and potential seagrass success in a eutrophic estuary. *Est. Coast. Shelf Sci.*, doi:10.1016/j.ecss.2014.07.005, 2014.

*Aretxabaleta et al. (2014b)*

Aretxabaleta, A. L., B. Butman, N. K. Ganju, Water level response in back-barrier bays unchanged following Hurricane Sandy, *Geophys. Res. Lett.*, 41, 3163-3171, doi:10.1002/2014GL059957, 2014.

*Aretxabaleta et al. (2014)*

Aretxabaleta, A. L., Butman, B., Signell, R. P., Dalyander, P. S., Sherwood, C. R., Sheremet, V. A., McGillicuddy, D. J., Near-bottom circulation and dispersion of sediment containing *Alexandrium fundyense* cysts in the Gulf of Maine during 2010-2011. *Deep-Sea Research II*, 103, 96-111, doi:10.1016/j.dsr2.2013.11.003, 2014.

*Butman et al. (2014)*

Butman, B., Aretxabaleta, A. L., Dickhudt, P. J., Dalyander, P. S., Sherwood, C. R., Anderson, D. M., Keafer, B. A., Signell, R. P., Investigating the importance of sediment resuspension in *Alexandrium fundyense* cyst population dynamics in the Gulf of Maine. *Deep-Sea Research II*, 103, 79-95, doi:10.1016/j.dsr2.2013.10.011, 2014.

*Grifoll et al. (2013)*

Grifoll, M., A. L. Aretxabaleta, J. L. Pelegri, M. Espino, J. C. Warner, A. Sanchez-Arcilla. Seasonal circulation over the Catalan inner-shelf (Northwest Mediterranean Sea), *J. Geophys. Res.*, doi:10.1002/jgrc.20403, 2013.

*Aretxabaleta and Smith (2013)*

Aretxabaleta, A. L., K. W. Smith, Multi-regime non-Gaussian data filling for incomplete ocean datasets. *J. Marine Syst.*, 119-120, 11-18, doi:10.1016/j.jmarsys.2013.03.001, 2013.

*Grifoll et al. (2012)*

Grifoll, M., A. L. Aretxabaleta, M. Espino, J. C. Warner. Inner-shelf dynamics in the Catalan Sea (NW Mediterranean Sea), *J. Geophys. Res.*, 117, C09027, doi:10.1029/2012JC008182, 2012

*Font et al. (2012)*

Font, J., J. Ballabrera-Poy, A. Camps, and 32 more. A new space technology for ocean observation: the SMOS mission. *Scientia Marina*, 76S1, 249-259, 2012.

*Ganju et al (2012)*

Ganju, N. K., M. Hayn, S.-N. Chen, R. W. Howarth, P. J. Dickhudt, A. L. Aretxabaleta, R. Marino. Tidal and groundwater fluxes to a shallow, microtidal estuary: Constraining inputs through field observations and hydrodynamic modeling. *Estuaries and Coast.* doi:10.1007/s12237-012-9515-x, 2012.

*Aretxabaleta and Smith (2011)*

Aretxabaleta, A., K. W. Smith, Analyzing state dependent model-data comparison in multi-regime systems, *Computational Geosciences*, doi:10.1007/s10596-011-9229-3, 2011.

*Aretxabaleta et al. (2011)*

Aretxabaleta, A., K. W. Smith, D. J. McGillicuddy Jr., J. Ballabrera-Poy, Model Initialization in a Tidally Energetic Regime: a Dynamically Adjusted Objective Analysis, *Ocean Modelling*, 36, 219-227, doi:10.1016/j.ocemod.2011.01.001, 2011.

*Aretxabaleta et al. (2009)*

Aretxabaleta, A. L., D. J. McGillicuddy Jr., K. W. Smith, J. P. Manning and D. R. Lynch, Model Simulations of the Bay of Fundy Gyre: 2. Hindcasts for 2005-2007 Reveal Interannual Variability in Retentiveness, *J. Geophys. Res.*, 114 (C09005), doi:10.1029/2008JC004948, 2009.

*Aretxabaleta et al. (2008)*

Aretxabaleta, A. L., D. J. McGillicuddy Jr., K. W. Smith and D. R. Lynch, Model Simulations of the Bay of Fundy Gyre: 1. Climatological Results, *J. Geophys. Res.*, 113 (C10027), doi:10.1029/2007JC004480, 2008.

*Aretxabaleta et al. (2007)*

Aretxabaleta, A. L., B. O. Blanton, F. E. Werner, E. P. Chassagnet, H. E. Seim, and J. R. Nelson, Cold Event in the South Atlantic Bight During Summer of 2003: Model Simulations and Implications, *J. Geophys. Res.*, 112 (C05022), doi:10.1029/2006JC003903, 2007.

*Smith and Aretxabaleta (2007)*

Smith, K. W. and A. L. Aretxabaleta, Expectation-Maximization Analysis of Spatial Time Series, *Nonlinear Processes in Geophysics*, 14, 73-77, 2007.

*Aretxabaleta et al. (2006)*

Aretxabaleta, A. L., J. R. Nelson, J. O. Blanton, H. E. Seim, F. E. Werner, J. M. Bane, and R. Weisberg, Cold Event in the South Atlantic Bight During Summer of 2003: Anomalous Hydrographic and Atmospheric Conditions, *J. Geophys. Res.*, 111(C06007), doi:10.1029/2005JC003105, 2006.

*Morales-Zarate et al. (2006)*

Morales-Zarate, M. V., A. L. Aretxabaleta, F. E. Werner and S. E. Lluch-Cota, Modeling winter circulation and particle retention in the Bahia Magdalena-Almejas lagoon system (Baja California Sur, Mexico), *Ciencias Marinas*, 32 (4), 631-647, 2006.

*Lough et al. (2006)*

Lough, R. G., E. A. Broughton, L. J. Buckley, L. S. Incze, K. P. Edwards, R. Converse, A. L. Aretxabaleta, and F. E. Werner, Modelling growth of Atlantic cod larvae on the southern flank of Georges Bank in the tidal-front circulation during May 1999, *Deep-Sea Res. II*, 53, 2771-2788, 2006.

*Aretxabaleta et al. (2005)*

Aretxabaleta, A. L., J. Manning, F. E. Werner, K. Smith, B. Blanton, and D. R. Lynch, Data Assimilative Hindcasting on the Southern Flank of Georges Bank during May 1999: Frontal Circulation and Implications, *Cont. Shelf Res.*, 25 (7/8), 849-874, 2005.

*Blanton et al. (2003)*

Blanton, B. O., A. L. Aretxabaleta, F. Werner, and H. Seim, Monthly climatology of the continental shelf waters of the South Atlantic Bight, *J. Geophys. Res.*, 108(C8), 3264, doi:10.1029/2002JC001609, 2003.

## Books:

*Aretxabaleta et al. (2011)*

Aretxabaleta, A. L., G. R. Brooks, and N. W. West, Project Earth Science: Physical Oceanography, Revised 2nd Edition. National Science Teachers Association Press Book, pp. 256, 2011.

*Lynch et al. (2014)*

Lynch, D. R., D. A. Greenberg, A. Bilgili, D. J. McGillicuddy Jr., J. P. Manning and A. L. Aretxabaleta, Particles in the Coastal Ocean: Theory and application. Cambridge University Press, 534 pages.

## Book Chapter:

*Werner et al. (2004)*

Werner, F. E., A. Aretxabaleta, and K. P. Edwards, Modelling marine ecosystems and their environmental forcing, in *Marine Ecosystems and Climate Variation*, edited by N. C. Stenseth, G. Ottersen, J. W. Hurrell and A. Belgrano, pp. 33–45, Oxford University Press, 2004.

## Dissertation:

Baroclinic Processes in Coastal Oceans: Observations and Modeling on Georges Bank and the South Atlantic Bight Continental Shelf (2005). UNC-CH, pp. 167.

## Manuscripts in Revision:

*Grifoll et al.*

Grifoll, M., A. L. Aretxabaleta, M. Espino. Shelf response to intense offshore wind, *J. Geophys. Res.*, Accepted.

*Defne et al.*

Defne, Z., N. K. Ganju, A. L. Aretxabaleta. Estimating time-dependent connectivity in aquatic systems, *Geophys. Res. Lett.*, submitted.

## Conference Proceedings:

*Aretxabaleta et al. (2010)*

Aretxabaleta, A. L., J. Gourrion, J. Ballabrera, A. Turiel, J. Font and R. W. Schmitt. Bridging the gap between surface salinity satellites: SMOS and Aquarius. *ESA Living Planet Symposium*, Bergen, Norway, 2010.

*Sabia et al. (2010)*

Sabia, R., J. Gourrion, M. Portabella, C. Gabarro, M. Talone, J. Ballabrera, A. Turiel, J. Martinez, A. Camps, A. L. Aretxabaleta, A. Monerris, J. Font. SMOS Measurements Preliminary Validation Against Modeled Brightness Temperatures and External-Source Salinity Data. *Proceedings of the 2010 IEEE International Geoscience and Remote Sensing Symposium*, 3166-3169, 2010.

*Gourrion et al.* (2010)

Gourrion, J., J. Ballabrera, A. L. Aretxabaleta, A. Turiel, B. Mourre, S. Kalaroni, N. Hoareau. Preliminary Validation of SMOS Products (Levels 3 and 4) *Proceedings of the 2010 IEEE International Geoscience and Remote Sensing Symposium*, 3170-3173, 2010.

*Sabia et al.* (2010b)

Sabia, R., J. Gourrion, C. Gabarro, M. Talone, M. Portabella, J. Ballabrera, A. L. Aretxabaleta, A. Camps, A. Monerris, J. Font. Preliminary Cross-Validation of the SMOS Measurements against Modeled Brightness Temperatures and External Salinity Data. *ESA Living Planet Symposium*, Bergen, Norway, 2010.

*Konstantinidou et al.*, (2010)

Konstantinidou, A., A. L. Aretxabaleta, J. Gourrion. Uncertainties on the Global Near-Surface Vertical Structure of Salinity. *ESA Living Planet Symposium*, Bergen, Norway, 2010.

*Ballabrera et al.* (2010)

Ballabrera, J., J. Gourrion, A. Turiel, A. L. Aretxabaleta, B. Mourre, S. Kalaroni, N. Hoareau. Preliminary Validation of SMOS Products (Levels 3 and 4) *ESA Living Planet Symposium*, Bergen, Norway, 2010.

*Sabia et al.* (2010c)

Sabia, R., J. Gourrion, C. Gabarro, M. Talone, J. Ballabrera, J. Font, A. L. Aretxabaleta, SMOS Mission Salinity Retrieval: Post-Launch First Assessment. *IEEE GOLD Congress*, 2010.

## Conference Presentations:

*Sherwood et al.* (2015)

Sherwood, C. R., A. L. Aretxabaleta, R. Verney, E. Boss, P. Thorne. Modeling Floc dynamics Observed during the OASIS Experiment, INTERCOH, Leuven (Belgium), Sept. 2015.

*Grifoll et al.* (2012)

Grifoll, M., A. L. Aretxabaleta, M. Espino, J. C. Warner. Inner-shelf dynamics in the Catalan Sea (NW Mediterranean Sea), European Geosciences Union General Assembly, Vienna (Austria), April 2012.

*Aretxabaleta et al.* (2012)

Aretxabaleta, A. L., J. Gourrion, S. Guimbard, R. Sabia, C. Gabarro, V. Gonzalez, J. Martinez, J. Font. Data quality improvements for satellite sea surface salinity data. *AGU Ocean Science*, Salt Lake City, USA, 2012.

*Aretxabaleta et al.* (2011)

Aretxabaleta, A. L., R. W. Schmitt., J. Ballabrera-Poy, K. W. Smith, J. Gourrion, J. Schanze, J. Font. Salinity and Water Cycle - Sea Surface Salinity Changes: Constant or Changing Trend or Mean Regime Shift. *WCRP Open Science Conference*, Denver, USA, 2011.

*Sherwood and Aretxabaleta* (2011)

Sherwood, C. R. and A. L. Aretxabaleta. Stratigraphic Modeling in ROMS. *CSDMS 2011*, Boulder, CO, USA, 2011.

*Emelianov et al.* (2010)

Emelianov, M., J. Gourrion, A. L. Aretxabaleta, A. Konstantinidou, M. Rosell, J. Martinez, F. Perez, J. Salvador, P. Fernandez, J. Ballabrera-Poy. A match-up database

for satellite-borne ocean salinity validation. European Geosciences Union General Assembly, Vienna (Austria), May 2010.

#### **Funded Proposals:**

- Spanish National Research Program (Juan de la Cierva): *Model Characterization of North and Equatorial Atlantic Variability using SMOS Salinity Measurements: Implications for the Meridional Overturning Circulation.* 2009-2012
- Spanish National Research Program (I3P): *Calibration and validation of the surface salinity measurements of the SMOS mission using hybrid models in the eastern North Atlantic subtropical gyre.* 2006-2009

#### **Field Experience:**

- 2006 Gulf of Maine Harmful Algal Bloom - *R/V Oceanus 425* - June 2006
- Massachusetts Bay Harmful Algal Bloom - *R/V Tioga 184-185-191* - May-June 2006
- Filaments in the North African Upwelling System - *R/V Hesperides* - September 1997
- Transect Lisbon-Madeira-Las Palmas - March and June 1997

#### **Other Activities:**

Spanish National Award for Undergraduate Degree 1998 (Premio National de Fin de Carrera de Educacion Universitaria). 2nd prize.

Reviewer for journals: Ocean Sci., Prog. Oceanogr., Cont. Shelf Res., Estuar. Coastal and Shelf S., Cienc. Mar., Computat. Geosci., Mar. Eco. Prog. Ser., J. Marine Syst., J. Mar. Sci. Eng., Sci. Mar., IEEE T. Geosci. Remote, Deep-Sea Res., and J. Geophys. Res. - Oceans.

Reviewer for the Spanish National Project Evaluation Agency (Agencia Nacional de Evaluacion y Prospectiva, ANEP) years: 2009, 2012, 2013.